

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 9 line 7 as follows:

SEQ ID NO: 19 is the amino acid sequence of a biotin ligase mutant having [[S143G]]
S134G amino acid substitution.

Please amend the paragraph beginning on page 35 line 9 as follows:

T90G has therefore been identified according to the invention as an important residue for accommodating *N*-substituted biotin analog type probes. Additional biotin analogs can be tested for incorporation using a panel of seventeen rationally-designed BirA point mutants: T90G, T90V, T90A, T90G/N91S, T90G/N91G, T90A/N91A, T90A/N91L, T90V/N91L, C107G, Q112G, Q112M, G115A, Y132A, Y132G, V189G, [[S143G]] S134G, and I207S. Many of the contacts with biotin are via side chains rather than backbone elements, indicating an opportunity to carve out considerable space to accommodate non-naturally occurring probes. Also, there is a large water-filled channel above the ureido moiety of biotin that appears wide enough to accommodate even larger structures (e.g., coumarin and fluorescein).